Space Weather Forecast

Issued on Wednesday, 24 August 2022 at 13:03 Local

This forecast provides a four day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales

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Space Weather Forecast Headline: Slight chance R1 Blackouts.

Analysis of Space Weather Activity over past 24 hours

Solar Activity: Solar Activity has been Very Low, with no significant flares observed. There are four sunspot regions on the visible disc. The largest and most complex region is now transiting across the northwest quadrant, however it has simplified a little and has somewhat reduced in size. Another region worth of note is developing in the southeast quadrant. This region continued to develop in size and complexity, although no new spots have been observed. The other two region are small and simple. No Earth-directed CMEs (coronal mass ejections) were observed.

Solar Wind / Geomagnetic Activity: The solar wind followed a broad declining trend over the last 24 hours, reducing erratically from 450 to around 380km/s as the influence from any recent weak coronal hole or transient enhancement decayed.. The magnetic field strength was generally weak, with only small fluctuations from the important the north-south component. Geomagnetic activity was Quiet.

Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) remained at background with no solar radiation storms observed.

Four-Day Space Weather Forecast Summary

Solar Activity: Solar activity is likely to remain Very Low to Low through this period, with only a slight chance of M-class flares

Solar Wind / Geomagnetic Activity: No Earth-directed CMEs feature in this forecast. Solar winds are expected to slowly decline towards background levels with geomagnetic activity remaining largely Quiet. A slight enhancement is possible at the end of day 3 (26th) and into day 4 (27th) under the influence of CH18/+ but its impact on geomagnetic activity should be minor, with perhaps a couple of Unsettled or Active intervals.

Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) is forecast to persist at background with no solar radiation storms occurring.

Issued by Met Office Space Weather Advisor, Tel: +44 (0) 330 135 4254 Email: moswoc@metoffice.gov.uk

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Geomagnetic Storms:

Geo-Magnetic Storm Probability (Exceedance)	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Minor or Moderate	G1 to G2	No	1	1	5	5
Strong	G3	No	1	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X Ray Flares:

X Ray Flares Probability	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	R1-R2 M Class	No	15	15	15	15
Very Active	R3 to R5 X	No	1	1	1	1

Solar Radiation Storms - (High Energy Protons):

Radiation Storms Probability (Exceedance)	Level (cm^{-2} sr^{-1} s^{-1})	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	≥ S1	No	1	1	1	1
Very Active	≥ S3 *	No	1	1	1	1

* S3 ≥ 10 MeV ≥ 1000 pfu and / or ≥ 50 MeV ≥ 10 pfu. (pfu = $cm^{-2}sr^{-1}s^{-1}$)

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